

Dell Inspiron 5423

Owner's Manual

Computer model: Inspiron 5423

Regulatory model: P35G | Regulatory type: P35G001



Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your computer.



CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Turn Off Your Computer and Connected Devices



CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

- 1 Save and close all open files and exit all open programs.
- 2 Follow the instructions to shut down your computer based on the operating system installed on your computer.
 - *Windows 8:*
Move your mouse pointer to the upper-right or lower-right corner of the screen to open the Charms sidebar, and then click **Settings**→ **Power**→ **Shutdown**.
 - *Windows 7:*
Click **Start**  and click **Shut down**.

Microsoft Windows shuts down and then the computer turns off.



NOTE: If you are using a different operating system, see the documentation of your operating system for shut-down instructions.

- 3 Disconnect your computer and all attached devices from their electrical outlets.
- 4 Disconnect all telephone cables, network cables, and attached devices from your computer.
- 5 Press and hold the power button for 5 seconds, after the computer is unplugged, to ground the system board.

Safety Instructions

Use the following safety guidelines to protect your computer from potential damage and ensure your personal safety.



WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



WARNING: Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the power source.



CAUTION: To avoid damaging the computer, ensure that the work surface is flat and clean.



CAUTION: To avoid damaging the components and cards, handle them by their edges and avoid touching pins and contacts.



CAUTION: Only a certified service technician is authorized to remove the computer cover and access any of the components inside the computer. See the safety instructions for complete information about safety precautions, working inside your computer, and protecting against electrostatic discharge.

- △ **CAUTION:** Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.
- △ **CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs or thumb-screws that you must disengage before disconnecting the cable. When disconnecting cables, keep them evenly aligned to avoid bending any connector pins. When connecting cables, ensure that the connectors and ports are correctly oriented and aligned.
- △ **CAUTION:** To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.
- △ **CAUTION:** Press and eject any installed card from the media-card reader.

Recommended Tools

The procedures in this document may require the following tools:

- Phillips screwdriver
- Plastic scribe

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After Working Inside Your Computer

After you complete the replacement procedures, ensure the following:

- Replace all screws and ensure that no stray screws remain inside your computer
- Connect any external devices, cables, cards, and any other part(s) you removed before working on your computer
- Connect your computer and all attached devices to their electrical outlets



CAUTION: Before turning on your computer, replace all screws and ensure that no stray screws remain inside the computer. Failure to do so may damage your computer.

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Removing the Memory Module(s)



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

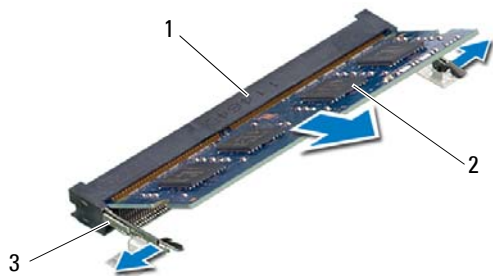
- 1 Close the display and turn the computer over.
- 2 Loosen the captive screw that secures the memory-module cover to the computer base.
- 3 Using your fingertips, lift and slide the memory-module cover out of the slots on the computer base.



1 captive screw

2 memory-module cover

- 4 Use your fingertips to carefully spread apart the securing clips on each end of the memory-module connector until the memory module pops up.
- 5 Remove the memory module from the memory-module connector.



1	memory-module connector	2	memory module
3	securing-clips (2)		



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Procedure

- 1 Align the notch on the memory module with the tab on the memory-module connector.
- 2 Slide the memory module firmly into the connector at a 45-degree angle and press the memory module down until it clicks into place. If you do not hear the click, remove the memory module and reinstall it.
- 3 Slide the tabs on the memory-module cover into the slots on the computer base and snap the memory-module cover into place.
- 4 Tighten the captive screw that secures the memory-module cover to the computer base.
- 5 Follow the instructions in "After Working Inside Your Computer" on page 9.

5

Removing the Optical-Drive Assembly



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Prerequisites

Follow the instructions from step 1 to step 3 in "Removing the Memory Module(s)" on page 11.

Procedure

- 1 Using your fingertips, slide the optical-drive assembly out of the optical-drive bay.



1 optical-drive assembly

- 2 Remove the screws that secure the optical-drive bracket to the optical-drive assembly.
- 3 Remove the optical-drive bracket from the optical-drive assembly.
- 4 Carefully pry the optical-drive bezel and remove it from the optical-drive assembly.



1	optical-drive bezel	2	optical drive
3	screws (2)	4	optical-drive bracket



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Procedure

- 1 Align the tabs on the optical-drive bezel with the slots on the optical drive and snap it into place.
- 2 Align the screw holes on the optical-drive bracket with the screw holes on the optical drive.
- 3 Replace the screws that secure the optical-drive bracket to the optical drive.
- 4 Slide the optical-drive assembly into position and ensure that the screw hole on the optical-drive bracket aligns with the screw hole on computer base.

Postrequisites

- 1 Follow the instructions from step 3 to step 4 in "Replacing the Memory Module(s)" on page 13.
- 2 Follow the instructions in "After Working Inside Your Computer" on page 9.

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Removing the Keyboard



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

Remove the memory module(s).

See "Removing the Memory Module(s)" on page 11.

Procedure

- 1 Peel off the label that is adhered to the system board.



1	label
---	-------

2 Remove the screw that secures the keyboard to the system board.



1 screw

- 3 Turn the computer over and open the display as far as possible.
- 4 Using a plastic scribe, release the keyboard from the tabs on the palm-rest assembly.



1	plastic scribe	2	tabs (3)
3	keyboard		

- 5 Turn the keyboard over and place it over the palm-rest assembly.
- 6 Lift the connector latch and disconnect the keyboard cable from the connector on the system board.
- 7 Lift the keyboard off the palm-rest assembly.



1	connector latch	2	keyboard cable
3	keyboard	4	tabs (4)

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Replacing the Keyboard



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Slide the keyboard cable into the connector on the system board and press down on the connector latch to secure the keyboard cable.
- 2 Slide the tabs at the bottom of the keyboard into the slots on the palm-rest assembly and place the keyboard on the palm-rest assembly.
- 3 Gently press around the edges of the keyboard to secure the keyboard under the tabs on the palm-rest assembly.
- 4 Close the display and turn the computer over.
- 5 Replace the screw that secures the keyboard to the system board.
- 6 Adhere the label to the system board.

Postrequisites

- 1 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 2 Follow the instructions in "After Working Inside Your Computer" on page 9.



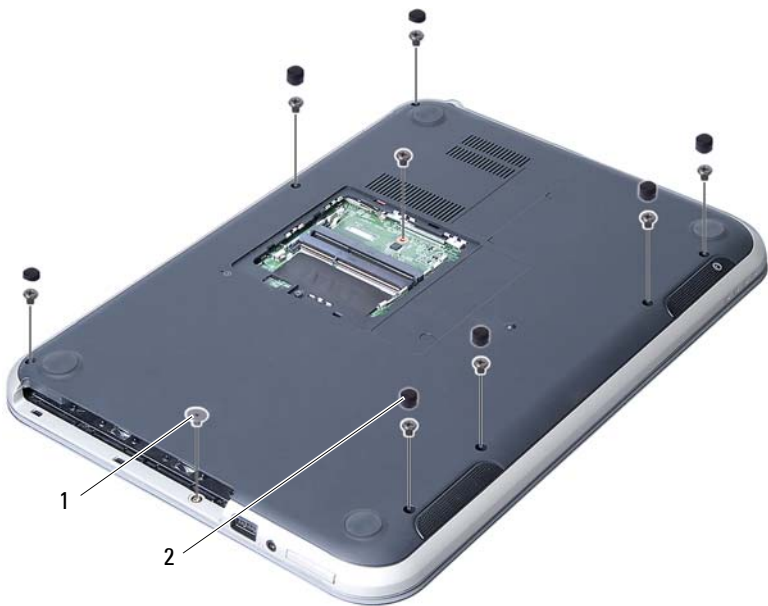
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.

Procedure

- 1 Close the display and turn the computer over.
- 2 Gently pry out the rubber screw caps that cover the screws on the computer base.
- 3 Remove the screws that secure the palm-rest assembly to the computer base.




1	screws (8)	2	rubber screw caps (7)
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- 4 Turn the computer over and open the display as far as possible.
- 5 Lift the connector latches and pull the pull-tab to disconnect the status-lights board cable, touchpad cable, touchpad status-light cable, and the hot-key board cable from the connectors on the system board.



1	hot-key board cable	2	status-lights board cable
3	touchpad cable	4	touchpad status-lights cable

- 6 Remove the screws that secure the palm-rest assembly to the system board.
- 7 Gently lift and release the tabs on palm-rest assembly from the slots on the computer base.

 **CAUTION: Carefully separate the palm-rest assembly from the display assembly to avoid damage to the display assembly.**

- 8 Lift the palm-rest assembly off the computer base.



1 palm-rest assembly

2 screws (4)

10 Replacing the Palm-Rest Assembly



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Procedure

- 1 Align the palm-rest assembly over the computer base.
- 2 Press down on the palm-rest assembly to snap it into place.
- 3 Slide the status-lights board cable, touchpad cable, touchpad status-light cable, and the hot-key board cable into the connectors on the system board and press down on the connector latches to secure the cables.
- 4 Replace the screws that secure the palm-rest assembly to the system board.
- 5 Close the display and turn the computer over.
- 6 Replace the screws that secure the palm-rest assembly to the computer base.
- 7 Replace the rubber screw caps that cover the screws on the computer base.

Postrequisites

- 1 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 2 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 3 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 4 Follow the instructions in "After Working Inside Your Computer" on page 9.

11

Removing the Battery



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1** Follow the instructions from step 1 to step 3 in "Removing the Memory Module(s)" on page 11.
- 2** Remove the optical drive. See "Removing the Optical-Drive Assembly" on page 15.
- 3** Remove the keyboard. See "Removing the Daughter Board" on page 47.
- 4** Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.

Procedure

- 1 Remove the screws that secure the battery to the computer base.
- 2 Lift the battery off the computer base.



1 battery

2 screws (2)

12 Replacing the Battery



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Align the screw holes on the battery with the screw holes on the computer base.
- 2 Replace the screws that secure the battery to the computer base.

Postrequisites

- 1 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 2 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 3 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 4 Follow the instructions from step 3 to step 4 in "Replacing the Memory Module(s)" on page 13.
- 5 Follow the instructions in "After Working Inside Your Computer" on page 9.

13 Removing the Hard Drive



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



CAUTION: To avoid data loss, do not remove the hard drive while the computer is in Sleep or On state.



CAUTION: Hard drives are extremely fragile. Exercise care when handling the hard drive.

Prerequisites

- 1 Follow the instructions from step 1 to step 3 in "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.

Procedure

- 1 Slide the hard-drive assembly toward the front of the computer to disconnect the hard-drive assembly from the connector on the system board.
- 2 Lift the hard-drive assembly out of the computer base.



1 hard drive

- 3 Remove the screws that secure the hard-drive bracket to the hard drive.
- 4 Slide the hard drive out of the hard-drive bracket.



1 screws (4)

2 hard drive bracket

3 hard drive

14 Replacing the Hard Drive



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



CAUTION: Hard drives are extremely fragile. Exercise care when handling the hard drive.

Procedure

- 1 Slide the hard drive into the hard-drive bracket.
- 2 Align the screw holes on the hard-drive bracket with the screw holes on the hard drive.
- 3 Replace the screws that secure the hard-drive bracket to the hard drive.
- 4 Place the hard-drive assembly on the computer base.
- 5 Slide the hard-drive assembly toward the back of the computer, to connect the hard-drive assembly to the connector on the system board.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 33.
- 2 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 3 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 4 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 5 Follow the instructions from step 3 to step 4 in "Replacing the Memory Module(s)" on page 13.
- 6 Follow the instructions in "After Working Inside Your Computer" on page 9.

15 Removing the Wireless Mini-Card



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



NOTE: Dell does not guarantee compatibility or provide support for Mini-Cards from sources other than Dell.

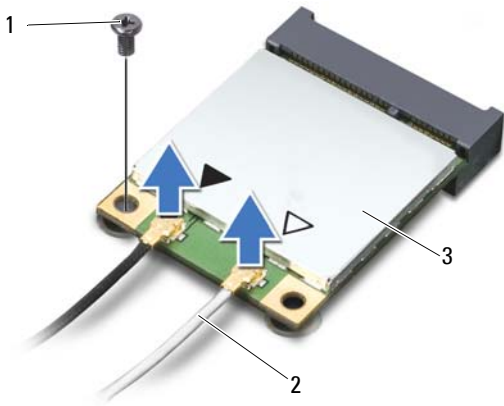
If you ordered a wireless Mini-Card with your computer, the card is already installed. Your computer has one half Mini-Card slot which supports a Wireless Local Area Network (WLAN) + Bluetooth combo card.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.

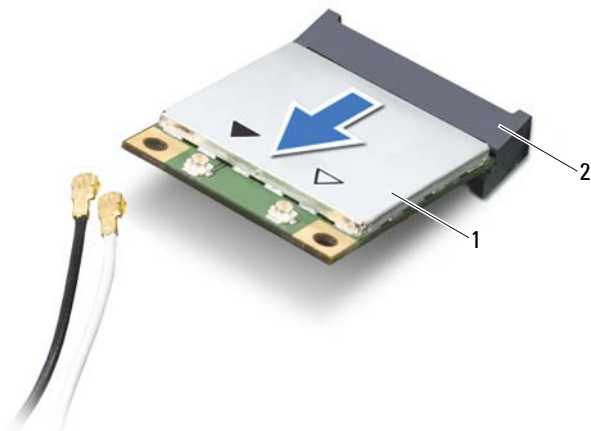
Procedure

- 1 Disconnect the antenna cables from the connectors on the Mini-Card.
- 2 Remove the screw that secures the Mini-Card to the system-board connector.



1	screw	2	antenna cables (2)
3	Mini-Card		

- 3 Slide and remove the Mini-Card out of the system-board connector.



1	Mini-Card	2	system-board connector
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16 Replacing the Wireless Mini-Card



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Procedure



CAUTION: To avoid damage to the mini-card, ensure that no cables are placed under the wireless mini-card.

- 1 Align the notch on the Mini-Card with the tab on the system-board connector.
- 2 Insert the Mini-Card connector at a 45-degree angle into the connector on the system board.
- 3 Press the other end of the Mini-Card down into the slot on the system board and replace the screw that secures the Mini-Card to the system board.
- 4 Connect the antenna cables to the Mini-Card.

The following table provides the antenna cable color schemes for the Mini-Card supported by your computer.

Connectors on the mini-card	Antenna cable color schemes
WLAN + Bluetooth (2 cables)	
Main WLAN + Bluetooth (white triangle)	white
Auxiliary WLAN + Bluetooth (black triangle)	black

Postrequisites

- 1** Replace the battery. See "Replacing the Battery" on page 33.
- 2** Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 3** Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 4** Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 5** Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 6** Follow the instructions in "After Working Inside Your Computer" on page 9.

17 Removing the mSATA Card



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.

Procedure

- 1 Remove the screw that secures the mSATA card to the system board.
- 2 Slide and remove the mSATA card out of the system-board connector.



1	screw	2	mSATA card
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18 Replacing the mSATA Card



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Align the notch on the mSATA card with the tab on the system-board connector.
- 2 Insert the mSATA card at a 45-degree angle into the system-board connector.
- 3 Replace the screw that secures the mSATA card to the system board.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 33.
- 2 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 3 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 4 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 5 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 6 Follow the instructions in "After Working Inside Your Computer" on page 9.

19 Removing the Daughter Board



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.

Procedure

- 1 Pull the pull-tab to disconnect the daughter-board cable from the connector on the daughter board.
- 2 Remove the screws that secure the daughter board to the computer base.
- 3 Turn the daughter board over and place it on the computer base.



1	screws (2)	2	daughter board
3	daughter-board cable		

- 4 Disconnect the speakers cable from the daughter board.
- 5 Lift the daughter board off the computer base.



1 speakers cable

2 daughter board

20 Replacing the Daughter Board



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Procedure

- 1 Connect the speakers cable to the connector on the daughter board.
- 2 Align the screw holes on the daughter board with the screw holes on the computer base.
- 3 Replace the screws that secure the daughter board to computer base.
- 4 Connect the daughter-board cable to the connector on the daughter board.

Postrequisites

- 1 Replace the battery. See "Replacing the Battery" on page 33.
- 2 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 3 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 4 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 5 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 6 Follow the instructions in "After Working Inside Your Computer" on page 9.

21 Removing the Speakers



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Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.
- 6 Remove the daughter board.
See "Removing the Daughter Board" on page 47.

Procedure

- 1 Note the speakers cable routing and remove the cable from the routing guides on the computer base.
- 2 Lift the speakers, along with the speakers cable, off the computer base.



1	speakers cable	2	speakers (2)
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22 Replacing the Speakers



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Align the speakers on the computer base.
- 2 Route the speakers cable through the routing guides on the computer base.

Postrequisites

- 1 Replace the daughter board.
See "Replacing the Daughter Board" on page 51.
- 2 Replace the battery. See "Replacing the Battery" on page 33.
- 3 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 4 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 5 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 6 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 7 Follow the instructions in "After Working Inside Your Computer" on page 9.

23 Removing the System Board



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in system setup after you replace the system board.



NOTE: Before disconnecting the cables from the system board, note the location of the connectors so that you can reconnect them correctly after you replace the system board.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.
- 6 Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7 Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8 Remove the mSATA card. See "Removing the mSATA Card" on page 43.

Procedure

- 1 Pull the pull-tab to disconnect the display cable from the connector on the system board.
- 2 Gently pry out the coin-cell battery that is adhered to the computer base.



1 display cable

2 coin-cell battery

- 3 Remove the screw that secures the system board to the computer base.
- 4 Gently lift the system board and turn it over.



1 screw

2 system board

- 5 Pull the pull-tab to disconnect the daughter-board cable from the connector on the system board.
- 6 Lift the system board off the computer base.



1 daughter-board cable

24 Replacing the System Board



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



NOTE: Your computer's Service Tag is stored in the system board. You must enter the Service Tag in the system setup after you replace the system board.

Procedure

- 1 Connect the daughter-board cable to the connector on the system-board.
- 2 Align the screw hole on the system board with the screw hole on the computer base.
- 3 Replace the screw that secures the system board to the computer base.
- 4 Connect the display cable to the connector on the system board.
- 5 Adhere the coin-cell battery to the computer base.

Postrequisites

- 1 Replace the mSATA card. See "Replacing the mSATA Card" on page 45.
- 2 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 3 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 4 Replace the battery. See "Replacing the Battery" on page 33.
- 5 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 6 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 7 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 8 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 9 Follow the instructions in "After Working Inside Your Computer" on page 9.

Entering the Service Tag in system setup

- 1 Turn on the computer.
- 2 Press <F2> during POST to enter the system setup program.
- 3 Navigate to the **Main** tab and enter your computer's Service Tag in the **Service Tag Input** field.

25 Removing the Coin-Cell Battery



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



WARNING: The battery may explode if installed incorrectly. Replace the battery only with the same or equivalent type. Discard used batteries according to the manufacturer's instructions.



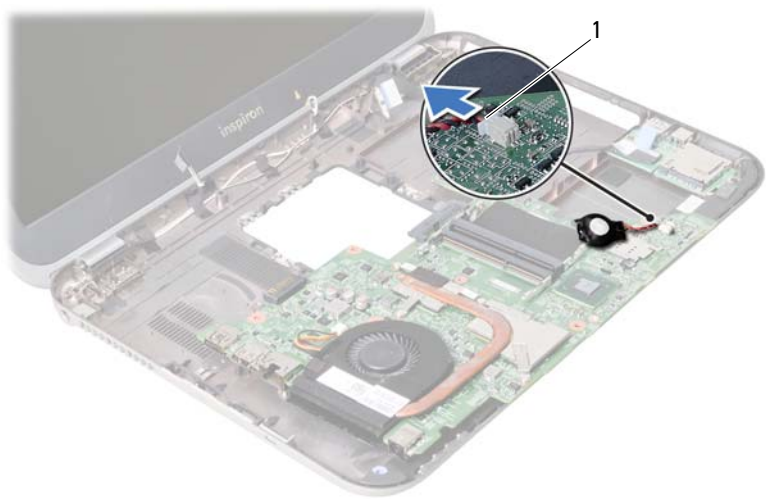
CAUTION: Removing the coin-cell battery resets the BIOS settings to default. It is recommended that you note the BIOS settings before removing the coin-cell battery.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.
- 6 Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7 Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8 Follow the instructions from step 1 to step 4 in "Removing the System Board" on page 57.

Procedure

- 1 Disconnect the coin-cell battery cable from the system-board connector.
- 2 Lift the coin-cell battery, along with the coin-cell battery cable, off the system board.



1 coin-cell battery cable

26 Replacing the Coin-Cell Battery



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.



WARNING: The battery may explode if installed incorrectly. Replace the battery only with the same or equivalent type. Discard used batteries according to the manufacturer's instructions.

Procedure

Connect the coin-cell battery cable to the system-board connector.

Postrequisites

- 1 Follow the instructions from step 2 to step 5 in "Replacing the System Board" on page 61.
- 2 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 3 Replace the battery. See "Replacing the Battery" on page 33.
- 4 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 5 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 6 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 7 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 8 Follow the instructions in "After Working Inside Your Computer" on page 9.

27 Removing the Thermal-Cooling Assembly



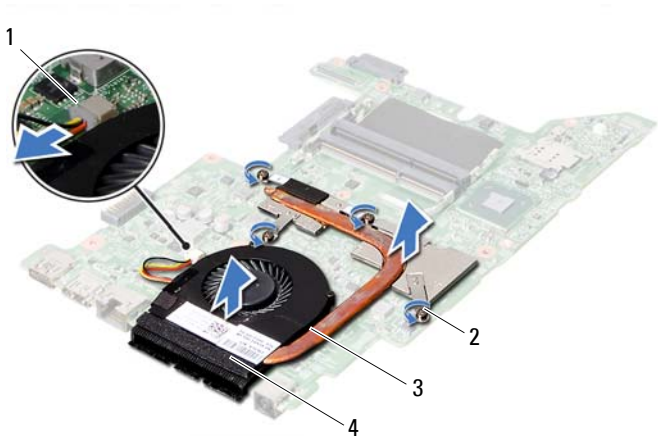
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.
- 6 Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7 Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8 Follow the instructions from step 1 to step 4 in "Removing the System Board" on page 57.

Procedure

- 1 Disconnect the fan cable from the system-board connector.
- 2 In sequential order (indicated on the heat sink), loosen the captive screws that secure the thermal-cooling assembly to the system board.
- 3 Lift the thermal-cooling assembly off the system board.



1	fan cable	2	captive screws (4)
3	heat sink	4	fan

28 Replacing the Thermal-Cooling Assembly



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Clean the thermal grease from the bottom of the thermal-cooling assembly and reapply it.
- 2 Align the screw holes on the thermal-cooling assembly with the screw holes on the system board.
- 3 In sequential order (indicated on the heat sink), tighten the captive screws that secure the thermal-cooling assembly to the system board.
- 4 Connect the fan cable to the system-board connector.

Postrequisites

- 1 Follow the instructions from step 2 to step 5 in "Replacing the System Board" on page 61.
- 2 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 3 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 4 Replace the battery. See "Replacing the Battery" on page 33.
- 5 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 6 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 7 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 8 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 9 Follow the instructions in "After Working Inside Your Computer" on page 9.

29 Removing the Display Assembly



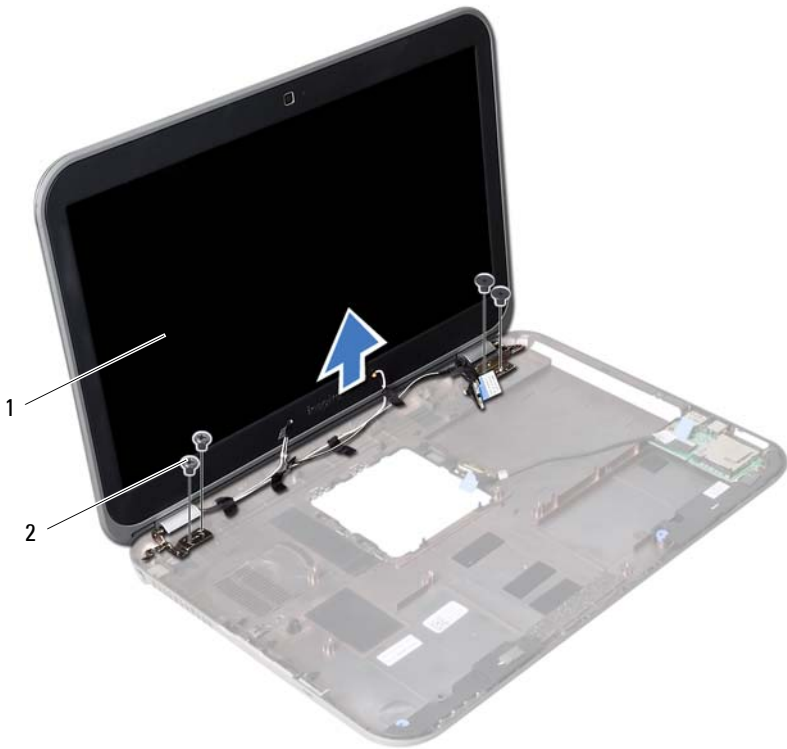
WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1 Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2 Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3 Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4 Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5 Remove the battery. See "Removing the Battery" on page 31.
- 6 Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7 Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8 Remove the mSATA card. See "Removing the mSATA Card" on page 43.
- 9 Remove the system board. See "Removing the System Board" on page 57.

Procedure

- 1 Remove the screws that secure the display assembly to the computer base.
- 2 Lift the display assembly off the computer base.



1 display assembly

2 screws (4)

30 Replacing the Display Assembly



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Place the display assembly on the computer base and align the screw holes on the display assembly with the screw holes on the computer base.
- 2 Replace the screws that secure the display assembly to the computer base.

Postrequisites

- 1 Replace the system board. See "Replacing the System Board" on page 61.
- 2 Replace the mSATA card. See "Replacing the mSATA Card" on page 45.
- 3 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 4 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 5 Replace the battery. See "Replacing the Hard Drive" on page 37.
- 6 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 7 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 8 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 9 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 10 Follow the instructions in "After Working Inside Your Computer" on page 9.

31 Removing the Display Bezel



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Prerequisites

- 1** Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2** Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3** Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4** Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5** Remove the battery. See "Removing the Battery" on page 31.
- 6** Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7** Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8** Remove the mSATA card. See "Removing the mSATA Card" on page 43.
- 9** Remove the system board. See "Removing the System Board" on page 57.
- 10** Remove the display assembly.
See "Removing the Display Assembly" on page 71.

Procedure

- 1 Using your fingertips, carefully pry up the inside edge of the display bezel.
- 2 Remove the display bezel off the display back-cover.



1 display bezel

32 Replacing the Display Bezel



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

Align the display bezel with the display back-cover, and gently snap it into place.

Postrequisites

- 1** Replace the display assembly.
See "Replacing the Display Assembly" on page 73.
- 2** Replace the system board. See "Replacing the System Board" on page 61.
- 3** Replace the mSATA card. See "Replacing the mSATA Card" on page 45.
- 4** Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 5** Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 6** Replace the battery. See "Replacing the Battery" on page 33.
- 7** Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 8** Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 9** Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 10** Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 11** Follow the instructions in "After Working Inside Your Computer" on page 9.

33 Removing the Display Hinges



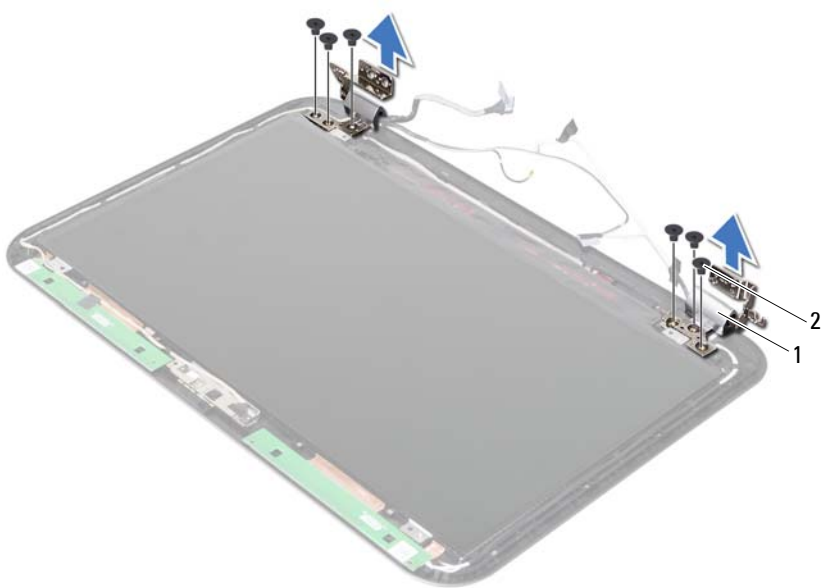
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Prerequisites

- 1** Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2** Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3** Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4** Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5** Remove the battery. See "Removing the Battery" on page 31.
- 6** Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7** Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8** Remove the mSATA card. See "Removing the mSATA Card" on page 43.
- 9** Remove the system board. See "Removing the System Board" on page 57.
- 10** Remove the display assembly.
See "Removing the Display Assembly" on page 71.
- 11** Remove the display bezel. See "After Working Inside Your Computer" on page 9.

Procedure

- 1 Remove the screws that secure the display hinges to the display panel.
- 2 Lift the display hinges off the display back-cover.



1	display hinges (2)	2	screws (6)
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34 Replacing the Display Hinges



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Align the screw holes on the display hinges with the screw holes on the display back-cover.
- 2 Replace the screws that secure the display hinges to the display back-cover.

Postrequisites

- 1 Replace the display bezel. See "Replacing the Display Bezel" on page 77.
- 2 Replace the display assembly.
See "Replacing the Display Assembly" on page 73.
- 3 Replace the system board. See "Replacing the System Board" on page 61.
- 4 Replace the mSATA card. See "Replacing the mSATA Card" on page 45.
- 5 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 6 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 7 Replace the battery. See "Replacing the Battery" on page 33.
- 8 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 9 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 10 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 11 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 12 Follow the instructions in "After Working Inside Your Computer" on page 9.

35 Removing the Display Panel



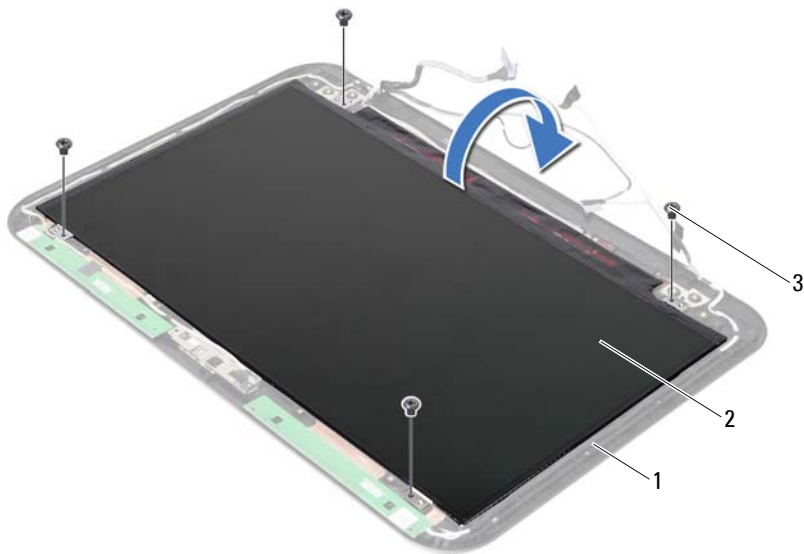
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Prerequisites

- 1** Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2** Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3** Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4** Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5** Remove the battery. See "Removing the Battery" on page 31.
- 6** Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7** Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8** Remove the mSATA card. See "Removing the mSATA Card" on page 43.
- 9** Remove the system board. See "Removing the System Board" on page 57.
- 10** Remove the display assembly.
See "Removing the Display Assembly" on page 71.
- 11** Remove the display bezel. See "Removing the Display Bezel" on page 75.
- 12** Remove the display hinges.
See "Removing the Display Hinges" on page 79.

Procedure

- 1 Remove the screws that secure the display panel to the display back-cover.
- 2 Gently lift the display panel and turn it over.



1 display back cover

2 display panel

3 screws (4)

- 3 Peel the tape that is adhered over the display cable.
- 4 Disconnect the display cable from the connector on the display panel.



1 display cable

2 tapes

36 Replacing the Display Panel



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Connect the display cable to the connector on the display panel.
- 2 Adhere the tape over the display cable.
- 3 Gently place the display panel on the display back cover.
- 4 Align the screw holes on the display panel with the screw holes on the display back-cover.
- 5 Replace the screws that secure the display panel to the display back-cover.

Postrequisites

- 1 Replace the display hinges. See "Replacing the Display Hinges" on page 81.
- 2 Replace the display bezel. See "Replacing the Display Bezel" on page 77.
- 3 Replace the display assembly.
See "Replacing the Display Assembly" on page 73.
- 4 Replace the system board. See "Replacing the System Board" on page 61.
- 5 Replace the mSATA card. See "Replacing the mSATA Card" on page 45.
- 6 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 7 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 8 Replace the battery. See "Replacing the Battery" on page 33.
- 9 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 10 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 11 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 12 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 13 Follow the instructions in "After Working Inside Your Computer" on page 9.

37 Removing the Camera Module



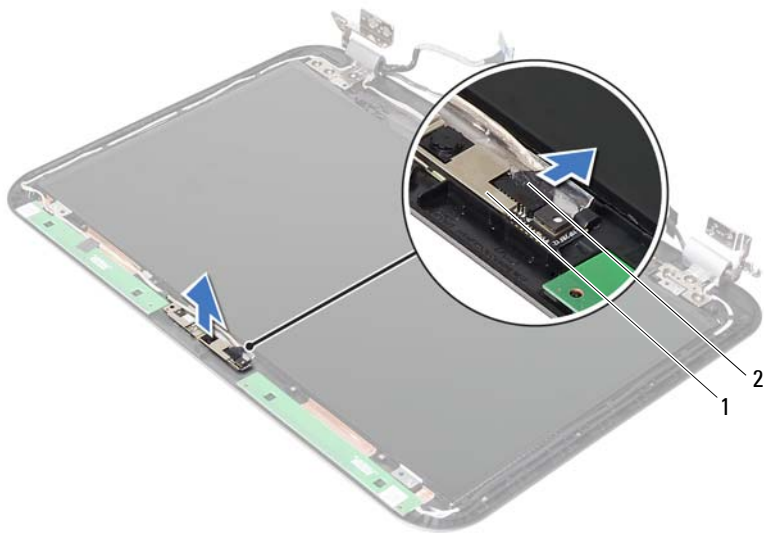
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Prerequisites

- 1** Remove the memory module(s).
See "Removing the Memory Module(s)" on page 11.
- 2** Remove the optical drive.
See "Removing the Optical-Drive Assembly" on page 15.
- 3** Remove the keyboard. See "Removing the Keyboard" on page 19.
- 4** Remove the palm-rest assembly.
See "Removing the Palm-Rest Assembly" on page 25.
- 5** Remove the battery. See "Removing the Battery" on page 31.
- 6** Remove the hard drive. See "Removing the Hard Drive" on page 35.
- 7** Remove the wireless Mini-Card.
See "Removing the Wireless Mini-Card" on page 39.
- 8** Remove the system board. See "Removing the System Board" on page 57.
- 9** Remove the display assembly.
See "Removing the Display Assembly" on page 71.
- 10** Remove the display bezel. See "Removing the Display Bezel" on page 75.

Procedure

- 1 Disconnect the camera cable from the connector on the camera module.
- 2 Lift the camera module off the display back-cover.



1	camera module	2	camera cable
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38 Replacing the Camera Module



WARNING: Before working inside your computer, read the safety information that shipped with your computer and follow the steps in "Before You Begin" on page 7. After working inside your computer, follow the instructions in "After Working Inside Your Computer" on page 9. For additional safety best practices information, see the Regulatory Compliance Homepage at dell.com/regulatory_compliance.

Procedure

- 1 Align the camera module on the display back-cover.
- 2 Connect the camera cable to the connector on the camera module.

Postrequisites

- 1 Replace the display bezel. See "Replacing the Display Bezel" on page 77.
- 2 Replace the display assembly.
See "Replacing the Display Assembly" on page 73.
- 3 Replace the system board. See "Replacing the System Board" on page 61.
- 4 Replace the wireless Mini-Card.
See "Replacing the Wireless Mini-Card" on page 41.
- 5 Replace the hard drive. See "Replacing the Hard Drive" on page 37.
- 6 Replace the battery. See "Replacing the Battery" on page 33.
- 7 Replace the palm-rest assembly.
See "Replacing the Palm-Rest Assembly" on page 29.
- 8 Replace the keyboard. See "Replacing the Keyboard" on page 23.
- 9 Replace the optical drive.
See "Replacing the Optical-Drive Assembly" on page 17.
- 10 Replace the memory module(s).
See "Replacing the Memory Module(s)" on page 13.
- 11 Follow the instructions in "After Working Inside Your Computer" on page 9.

39 Flashing the BIOS

You may need to flash the BIOS when an update is available or after replacing the system board. To flash the BIOS:

- 1 Turn on the computer.
- 2 Go to **support.dell.com/support/downloads**.
- 3 Locate the BIOS update file for your computer:



NOTE: The Service Tag for your computer is located on a label at the back of your computer. For more information, see the *Quick Start Guide* that shipped with your computer.

If you have your computer's Service Tag or Express Service Code:

- a Enter your computer's Service Tag or Express Service Code in the **Service Tag or Express Service Code** field.
- b Click **Submit** and proceed to step 4.

If you do not have your computer's Service Tag or Express Service Code:

- a Select one of the following options:
 - **Automatically detect my Service Tag for me**
 - **Choose from My Products and Services List**
 - **Choose from a list of all Dell products**
 - b Click **Continue** and follow the instructions on the screen.
- 4 A list of results appears on the screen. Click **BIOS**.
 - 5 Click **Download File** to download the latest BIOS file.
 - 6 In the **Please select your download method below** window, click **For Single File Download via Browser**, and then click **Download Now**. The **File Download** window appears.
 - 7 In the **Save As** window, select an appropriate location to download the file on your computer.
 - 8 If the **Download Complete** window appears, click **Close**.
 - 9 Navigate to the folder where you downloaded the BIOS update file.
 - 10 Double-click the BIOS update file icon and follow the instructions that appear on the screen.

